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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/028,742

12/20/2001

Karl Steadman

SRI-4686-2

9913

7590

05/07/2004

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EXAMINER

DEAN, RAYMOND S

ART UNIT

PAPER NUMBER

2684

7

DATE MAILED: 05/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,742

Applicant(s)

STEADMAN ET AL.

Examiner

Raymond S Dean

Art Unit

2684

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 16 – 19 are objected to because of the following informalities: Claims 16 – 19 should depend on Claim 15. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 – 2, 6 – 8, 10, and 12 – 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Proctor, JR. (US 2003/0048770 A1).

Regarding Claim 1, Proctor teaches a method of adaptively controlling an antenna pattern of a wireless communications device in a packet-switched wireless communications network (Figure 1, Abstract), the method comprising the steps of: receiving an electromagnetic signal over the packet-switched wireless communications network by a wireless communication device having a receive antenna pattern (Section 0030 lines 4 – 6, Section 0039 lines 1 – 5); determining if the electromagnetic signal is

from an intended or unintended source (Section 0039 lines 5 – 12, the unintended source is the unknown source); and adapting the receive antenna pattern if the electromagnetic signal is from an unintended source (Section 0039 lines 5 – 12, the pattern changes as the antenna steps through a series of directional angles).

Regarding Claim 2, Proctor teaches all of the claimed limitations recited in Claim 1. Proctor further teaches comparing an identifier of the source included in the electromagnetic signal to a list of identifiers associated with intended sources to determine that the source is an intended source (Figure 1, Section 0039 lines 5 – 9, the identifier of the source is compared to identifiers of known or intended sources in the table (25), if it is in the table it is a known or intended source and if it is not in the table it is an unknown or unintended source).

Regarding Claim 6, Proctor teaches all of the claimed limitations recited in Claim 1. Proctor further teaches an unintended source is a cordless telephone (Section 0004 lines 9 – 17, a cordless telephone falls under the category of other types of radio equipment that operate in the same unlicensed radio frequency band as the wireless LAN).

Regarding Claim 7, Proctor teaches all of the claimed limitations recited in Claim 1. Proctor further teaches an unintended source is a node in the network (Section 0030 lines 1 – 4, the wireless LAN comprises the nodes thus said nodes operate in the unlicensed radio frequency band, this means that the nodes can also be unintended sources).

Regarding Claim 8, Proctor teaches an apparatus for adaptively controlling an antenna pattern of a wireless network device in a packet-switched wireless communications network (Figure 1, Abstract), the apparatus comprising: first and second antenna elements each receiving an electromagnetic signal from a source over the packet-switched network and forming a receive antenna pattern (Section 0030 lines 4 – 6, Section 0039 lines 1 – 5, the access point has an antenna array which means there will be at least two elements); a verification module, in communication with the antenna elements, receiving the signal from the antenna elements and verifying whether the source of the signal is an intended or unintended source (Section 0039 lines 5 – 9, there is verification by table look up to determine if the source is known (intended) or unknown (unintended) thus there is an inherent verification module); and a controller in communication with at least one of the antenna elements and with the verification module to adaptively control the receive antenna pattern in response to a determination that the source of the electromagnetic signal is an unintended source (Section 0034 lines 5 – 7, Section 0039 lines 5 – 12, the pattern changes as the antenna steps through a series of directional angles).

Regarding Claim 10, Proctor teaches all of the claimed limitations recited in Claim 8. Proctor further teaches wherein the electromagnetic signal contains information indicative of a specific network protocol (Figure 2A, Figure 2B, Section 0035 lines 1 – 9, Section 0039 lines 3 – 5) the information being used to verify the source of the signal as an intended or unintended source (Section 0039 lines 5 – 9).

Regarding Claim 12, Proctor teaches all of the claimed limitations recited in Claim 8. Proctor further teaches wherein the apparatus is a wireless network card (Section 0033 lines 1 – 9, the access point consists of: transmitter, receiver, and network interface circuitry, said circuitry will reside on a printed circuit card, which is an inherent element of a typical access point in a wireless LAN).

Regarding Claim 13, Proctor teaches all of the claimed limitations recited in Claim 8. Proctor further teaches wherein the unintended source is a cordless telephone (Section 0004 lines 9 – 17, a cordless telephone falls under the category of other types of radio equipment that operate in the same unlicensed radio frequency band as the wireless LAN).

Regarding Claim 14, Proctor teaches all of the claimed limitations recited in Claim 8. Proctor further teaches wherein the unintended source is a node in the network (Section 0030 lines 1 – 4, the wireless LAN comprises the nodes thus said nodes operate in the unlicensed radio frequency band, this means that the nodes can also be unintended sources).

Regarding Claim 15, Proctor teaches in a packet-switched wireless communications network, a method for use by a wireless communication device having a plurality of antennas to control a direction of communication over the network (Figure 1, Section 0030 lines 4 – 6, Section 0039 lines 5 – 12), the method comprising the steps of: cooperatively producing by the plurality of antennas of the wireless communication device an antenna pattern for exchanging electromagnetic signals over the packet-switched wireless communications network (Figure 1, Section 0030 lines 4 –

6, Section 0039 lines 5 – 12); and adapting the antenna pattern produced by the plurality of antennas in response to an electromagnetic signal received over the packet-switched wireless communications network to control a direction of subsequent communication over the network (Section 0039 lines 1 – 12, the pattern changes as the antenna steps through a series of directional angles).

Regarding Claim 16, Proctor teaches all of the claimed limitations recited in Claim 15. Proctor further teaches a receive antenna pattern (Figure 1, Section 0030 lines 4 – 6, all antennas have transmit and receive patterns thus this is an inherent characteristic).

Regarding Claim 17, Proctor teaches all of the claimed limitations recited in Claim 15. Proctor further teaches reducing noise in subsequently received electromagnetic signals (Section 0012).

Regarding Claim 18, Proctor teaches all of the claimed limitations recited in Claim 15. Proctor further teaches increasing a signal-to-noise ratio of transmitted electromagnetic signals (Section 0012, signal-to-noise ratio falls under the category of other comparable measure).

Regarding Claim 19, Proctor teaches all of the claimed limitations recited in Claim 15. Proctor further teaches reducing an effect of interference from an interfering source (Abstract, Section 0012, the direction with the best received signal metric is the direction with minimal interference).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor, JR. (US 2003/0048770 A1) in view of Locher et al. (5,940,033).

Regarding Claim 3, Proctor teaches all of the claimed limitations recited in Claim

1. Proctor further teaches comparing an identifier of the source included in the electromagnetic signal to a list of identifiers to determine that the source is an unintended source (Section 0039 lines 5 – 9, the identifier of the source is compared to identifiers of known or intended sources in the table (25), if it is in the table it is a known or intended source and if it is not in the table it is an unknown or unintended source).

Proctor does not teach a list of identifiers associated with unintended sources.

Locher teaches a list of identifiers associated with unintended sources (Column 5 lines 21 – 25, the jammer file is the list of identifiers associated with unintended sources).

Proctor and Locher both teach an adaptable antenna array for interference suppression thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the jammer file of Locher in the access point of

Proctor for the purpose of creating an access point with an adaptable antenna array that maintains optimal and reliable radio links in the presence of numerous interference sources.

6. Claims 4 – 5, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Proctor, JR. (US 2003/0048770 A1) in view of Youssefmir et al. (6,141,567).

Regarding Claim 4, Proctor teaches all of the claimed limitations recited in Claim

1. Proctor does not teach the step of weighting the received electromagnetic signal.

Youssefmir teaches the step of weighting the received electromagnetic signal (Column 3 lines 45 – 50)

Proctor and Youssefmir both teach an adaptable antenna array for interference suppression thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use weighting method of Youssefmir in the access point with an adaptable antenna array for the purpose of adjusting the phase and amplitude of each of the signals received at the antenna array elements of said access point thus allowing the signals of interest to be selected while minimizing the interference.

Regarding Claim 5, Proctor in view of Youssefmir teaches all of the claimed limitations recited in Claim 4. Youssefmir further teaches creating a null in the receive antenna pattern at a location determined in response to the location of the unintended source (Column 3 lines 20 – 34).

Regarding Claim 9, Proctor teaches all of the claimed limitations recited in Claim 8. Proctor does not teach a weighting module having a complex weight associated therewith in communication with at least one antenna element and a determination module in communication with the weighting module, the determination module determining the complex weight used to generate a null in the receive antenna pattern at a location determined in response to the location of the unintended source.

Youssefmir teaches a weighting module having a complex weight associated therewith in communication with at least one antenna element (Column 6 lines 12 – 22, the signals are weighted thus there is an inherent weighting module) and a determination module in communication with the weighting module, the determination module determining the complex weight used to generate a null in the receive antenna pattern at a location determined in response to the location of the unintended source (Column 3 lines 20 – 34, Column 6 lines 22 – 32).

Proctor and Youssefmir both teach an adaptable antenna array for interference suppression thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use weighting and determination module of Youssefmir in the access point with an adaptable antenna array for the purpose of adjusting the phase and amplitude of each of the signals received at the antenna array elements of said access point thus allowing the signals of interest to be selected while minimizing the interference.

Regarding Claim 11, Proctor teaches all of the claimed limitations recited in Claim 8. Proctor does not teach a combination module to combine the received signal.

Youssefmir teaches a combination module to combine the received signal (Column 6 lines 12 – 16, the adaptive antenna processing elements are the combination module).

Proctor and Youssefmir both teach an adaptable antenna array for interference suppression thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the combination module of Youssefmir in the access point with an adaptable antenna array for the purpose of providing an estimate of a signal received from a node thus allowing the quality of said signal to be determined.

Conclusion

7. Any inquiry concerning this communication should be directed to Raymond S. Dean at telephone number (703) 305-8998.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

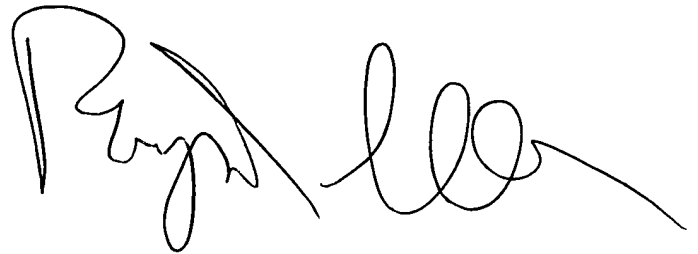
(703) 872-9314 (for Technology center 2600 only)

Hand – delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to

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the status of this application or proceeding should be directed to the Technology Center
2600 Customer Service Office whose telephone number is (703) 306-0377

A large, stylized handwritten signature in black ink, appearing to read 'Raymond Lee'.


NAY MAUNG
SUPERVISORY PATENT EXAMINER